

REMARKS

Claims 11, 13-17, 19 and 20 are pending. Claims 12 and 18 are cancelled herein without prejudice or disclaimer. Claim 11 has been amended to incorporate the features of claims 12 and 18. Claims 13, 15, 17, 19 and 20 are amended to provide for proper dependency. Support for the amendments is detailed below.

Applicants' Response to the Claim Rejections under 35 U.S.C. §103(a)

Claims 11-16, 18 and 19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Shiga et al. (EP 1,536,543, using 2006/0103253 for citation purposes), in view of Osada et al. (US 5,435,953).

In response thereto, applicants respectfully submit that the combination of references does not render the current invention as now claimed obvious for at least the reason that all the features of the claims are not provided for, nor is there any rationale prompting a skilled artisan to modify the combination so as to derive the present invention.

Specifically, the combination of Shiga and Osada at least does not provide for the combination of features of parent claim 11 now incorporating the features of claims 12 and 18.

The rejection of claim 18 as set forth on pages 8 and 9, sections 24-26 relies upon the general disclosures of Shiga and Osada. Specifically, the rejection cites to Shiga as teaching multiple configurations or embodiments, and Osada teaching resin reservoir pots located in an upper die which delivers resin through a resin path to a cavity between the upper and lower dies for the purpose of injecting with pressure to exclude unwanted air or moisture and to fill the resin

in such away as to avoid formation of voids and defective portions in the molded resin body or area. The rejection thereby concludes that it would have been obvious to modify or combine the teachings of Shiga and Osada for the benefit of injecting with pressure to exclude unwanted air or moisture from resin, cavities, and/or pots, and to fill the resin in such a way as to then avoid the formation of voids and defective portions in the molded resin body or area and to allow unwanted air and moisture to escape. However, the applicants respectfully submit that a skilled artisan cannot derive the exact claim language of claim 18 now incorporated in parent claim 11.

As set forth in the M.P.E.P. §2141.02, distilling an invention down to the "gist" or "thrust" of an invention disregards the requirement of analyzing the subject matter "as a whole."

In the current instance, the combination of Shiga and Osada does not provide for the combination of features of the claim requiring the upper die has resin reservoir pots in a region radially inward of and different from positions of the magnet insertion holes as viewed from a top thereof, and the liquefied resin material is supplied to the holes from the pots through resin passages formed on an undersurface of the upper die.

By the above feature, when the upper die is elevated and detached from the upper surface of the laminated rotor core, the resin material passed through resin passages remains cured on the surface of the laminated rotor core. Since the plungers are pushed to the ends of the resin reservoir pots the cured resin material will not remain in the pots.

In the present invention, when the resin reservoir pots are in a region radially inward of and different from positions of the magnet insertion holes as viewed from a top thereof, and the resin material is poured into the holes located radially outward from the pots, the resin material

pushes the permanent magnets outward, and as a result, the permanent magnets are closely placed in the radially outward area of the laminated rotor core. See FIG. 3. Therefore, it is expected that magnetic characteristics will be improved in the outer peripheral surface of the laminated rotor core.

The combination of Shiga and Osada cannot result in this feature. As explained in detail in FIG. 8A, FIG. 8B, and related parts of the description of Shiga, the manufacturing method comprises:

- placing the rotor core in a gap between an upper die 32a and a lower die 32b; and
- pouring resin material into a cavity 34 to fill through holes 28, insertion holes 25, recesses 27, and troughs 29.

Contrary, in the present invention per claim 11, the upper and lower dies press the laminated rotor core placed therebetween, and the resin material is poured from the upper die to seal the magnets. In regard to the upper die, Shiga discloses neither the resin reservoir pots reaching the upper surface of the core nor the plungers inserted into the pots.

Furthermore, in Shiga, the permanent magnets 19 are placed radially inward from the insertion holes 25. See Figs. 2 and 5. In the present invention, the resin reservoir pots are in a region radially inward of and different from positions of the magnet insertion holes as viewed from a top thereof, and the resin material is poured into the holes placed radially outward from the pots. In the holes, the resin material actively pushes the permanent magnets outward, and as a result, the permanent magnets are closely placed in the radially outward area of the core.

Shiga does not provide for this aspect of the invention as now claimed, nor is this aspect devisable when Shiga is combined with Osada.

Osada discloses a method for resin sealing an electronic part by using upper and lower dies, which have cavities mutually opposed to each other. Osada is applied to electrical parts, whereas the present invention is applied to the permanent magnets, which are inserted into the magnet insertion holes in the laminated rotor core. Hence, the technical fields are clearly distinct between Osada and Shiga as well as and the present invention.

As such, Osada cannot provide for the features related to a motor core such as: holding the laminated rotor core between the upper and lower dies; pushing the resin material out of the resin reservoir pots by using the plungers, the pots provided in the upper die and vertically penetrating the upper die; and pouring the resin material to the magnet insertion holes through the upper surface of the laminated rotor core.

Furthermore, Osada discloses a different configuration wherein the resin reservoir pots are provided in the lower die, whereas the present invention discloses the resin reservoir pots provided in the upper die. Thus, in the present invention, the magnetic insertion holes of the laminated rotor core are filled with the resin material injected from the upper die via the resin passages formed on the top of the core (i.e., the lower surface of the upper die). In this manner, the resin material cured after the resin sealing process remains on the upper surface of the laminated rotor core, and such unnecessary resin material can be removed with ease. These types of aspects of resin mold filling do not apply to electrical parts encasing as set forth by Osada. Hence, Osada cannot provide any rationale for modifying Shiga.

Wherefore, applicants respectfully submit that claim 11 as now presented as well as its respective dependent claims are not obvious in light of the combination of Shiga and Osada.

Claims 11, 12, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiga et al (EP 1,536,543, using 2006/0103253 for citation purposes), in view of Sera (US 4,386,898).

The rejection is similar to that above based on the combination of Shiga and Osada, except the rejection relies upon the disclosure Sera for the reservoir/plunger system in the upper die. As noted above, applicants have incorporated claim 18 into claim 11. Wherefore, the rejection is mooted.

Claim 20 is rejected under 35 U.S.C. §103(a) as being unpatentable over Shiga et al. (EP 1,536,543, using 2006/0103253 for citation purposes), in view of Osada et al. (US 5,435,953) or Sera as applied to claims 11 and 12 above, and further in view of Venrooij (WO 2005/120799, using US 2008/0277825 for citation purposes).

Applicants respectfully submit that by addressing the rejection of parent claim 11, as detailed above, likewise the rejection of claim 20 is addressed by nature of its dependency.

Application No. 10/584,922
Art Unit: 1791

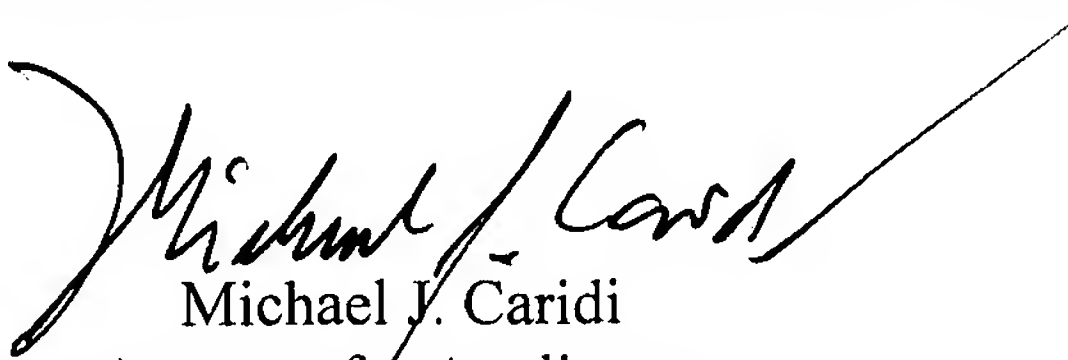
Amendment under 37 C.F.R. §1.111
Attorney Docket No. 062663

In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,
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